I. Hackelia ophiobia Carr. (Owyhee River stick seed)

II. Family: Boraginaceae

III. Status: Idaho State sensitive list.

IV. Known Locations:

Oregon: Malheur County:

Three Forks first collected in 1957, not collected since that time till recently and first described in Madrono 22:390-392, 1974 by Robert L. Carr.

Nevada: Washoe County:

Sheldon Antelope National Wildlife Refuge in Nevada.

Humboldt County:

a. A. Tiehm #4491 and B. Rogers 1978 - East part of Thousand Creek Gorge, 2. 5-3. 5 air miles NW of Range HQ Duffurena Ranch, T. 46 N., R. 26 E. With Poa on a steep bank above creek.

b. T. 42 N., R. 43 E., Sec. 15 SE1/4

c. T. 42 N., R. 43 E., Sec. 17 - North Fork Humboldt River

Elko County:

a. M.P. & M.J. Yoder-Williams #1802, 27 August 1980. Upper gorge of Milligan Creek, 0.53 mile SSW of Four Mile Butte, T. 42 N., R. 45 E., Sec. 18, NW1/4, 5125 ft. Plants extending along the base of a NE facing cliff face for a short distance.

b. Side creek off the Upper South Fork of the Owyhee River. Rosentreter 1982.

Idaho: Owyhee County:

a. Upper East Fork of the Owyhee River.

b. Several side drainages off the South Fork of the Owyhee River.

c. Deep Creek off the East Fork of the Owyhee River.

V. Soil Type: Talus and crevices on rhyolitic rock, associated with the moss-Homalothecium aeneum.

VI. Habitat and Ecology: Hackelia ophiobia appears to be restricted to certain rhyolitic rock types. In Idaho it is found only in shaded locations and north facing cliffs and talus. It flowers in early April

and is most common in the headwaters and occurs only occasionally downstream. The East Fork is oriented in a east-west direction with much of the south side of the canyon north facing. The South Fork of the Owyhee runs in a south-north direction and has fewer north facing cliffs and apparently lacks H. ophiobia except on side drainages.

VII. Remarks: Hackelia ophiobia occurs in small disjunct populations and should be looked for more. Careful comparison studies should be undertaken of the different populations. It always grows in areas far from human influences and a look at historic heavy grazing in some of the other sections of the Owyhee River and the Bruneau River suggest that it may be sensitive to grazing. The most common site for its growth is at the base of cliffs rather than in crevices on the East Fork of the Owyhee River. It may just be in crevices as a refugia. The species name ophiobia refers to snake and it would seem that a field botanist named this after the common occurrence of snakes in Hackelia ophiobia sites.

VIII. Hazards: Grazing in the river canyons. Desert bighorn sheep could also possibly affect its existence although the Deep Creek area which has a lot of sheep showed no adverse effects on Hackelia. Daming of the Owyhee River would destroy its habitat.

IX. Management Recommendations: Protect known populations from all hazards and map its distribution area.

I. Haploppapus radiatus (Snake River Goldenweed)

II. Family: Compositae

III. Status: Federal Category II

IV. Known Locations:

Idaho: Washington County:

a. T. 14 N., R. 6 W., Sec. 10 (4th of July Meadow - 1 1/2 miles east of Mineral)

b. T. 11 N., R. 5 W., Sec. 33 (approx.)

Four historic sites, including:

a. T. 11 N., R. 5 W., Sec. 3 (1941)

b. T. 17 N., R. 5 W., Sec. 26 (1952)

Oregon: 35 sites - Meinke

a. Approximately 0.5 miles from Interstate I80N along Big Lookout Mountain Road until 2.5 mile marker

b. Snake River Canyon between Bonyard Gulch and the Snake River Mine

V. Soil Type: Gravelly loams.

VI. Habitat and Ecology: Haplopappus radiatus occurs in Artemisia tridentata ssp. tridentata habitats with skeletal gravelly loam soils near the Snake River. These sites are in fair-poor range condition. It is very sensitive to insect predation. In 1985, it was heavily eaten by grasshoppers. No seedling establishment was found in Idaho and it appears that annual exotic grasses out compete the seedlings.

VII. Haplopappus radiatus is difficult to notice early in the spring and therefore, avoids detection. Later in the summer, grasshoppers can eat it to a skeletal ugly sample which doesn't make for good specimen collecting. I believe there may be several more sites of this flower but the area was only inventoried in the spring of the year. The reproductive success of this species appears to be very low.

VIII. Hazards: Competition from exotic annuals appears as the most critical threat to H. radiatus. Grazing, ORV use, and wild fires are also threats to this plant.

IX. Management Recommendations: This plant is in need of further inventory and the known site should be monitored, making particular note of seedlings, seedling success, competition, and dispersal. Protect the known site and monitor the populations' reproductive success.

I. Ivesia baileyi (Bailey's Ivesia)

II. Family: Roseaceae

III. Status: Uncommon.

IV. Known Locations:

Idaho: Owyhee County

a. Jump Creek Canyon - T. 2 N., R. 5 W., Sec. 27

b. Most of the canyon portions of the North Fork of the Owyhee River.

T. 9 S., R. 4 W., Sec. 10, 11, 14, 15, 22, 27, 31, 32, 33

T. 9 S., R. 5 W., Sec. 31, 32, 33, 34, 35, 36

T. 10 S., R. 6 W., Sec. 1, 3, 10, 11

c. Red Canyon - T. 13 S., R. 4 W., Sec. 29, 31

T. 13 S., R. 4 W., Sec. 6, 7, 18, 19

d. South of Brace Ranch - T. 13 S., R. 3 W., Sec. 27, 28

e. Bruneau River Canyon - the entire length of the canyon.

f. Occurs along most of the Jarbidge River.

g. Flint Creek

h. Cougar Canyon

i. Big Jack's Creek Canyon

j. Little Jack's Creek Canyon

k. East Fork Owyhee River

l. Deep Creek of the Owyhee River

m. Middle Fork of the Owyhee River

n. Cottonwood Creek of Jack's Creek Drainage

Elmore County:

South Fork of the Boise River Canyon - T. 2 N., R. 6 E., several sections.

Oregon: Malheur County:

Three forks of the Owyhee River crossing - just upstream.

T. 34 S., R. 46 E., Sec. 35

Harney County: 14 sites.

Nevada: Elko County:

a. T. 47 N., R. 64 E., Sec. 4 on Salmon Falls Creek

b. One other site reported for Elko County

Humboldt County: 1 site.

a. Quin River

b. North Fork Humboldt River: 41° 31' latitude, 117° 7' longitude

Pershing County:

a. Buena Vista Creek - T. 30 N., R. 34 E., Sec. 27, NW 1/4

V. Soil Type: Rhyolitic cliffs.

VI. Habitat and Ecology: Ivesia baileyi grows in moist sites on vertical canyon walls. It occurs near rapids or areas with high humidity. Last year's stalks remain attached and flowering occurs all summer. The leaves and stems have numerous hairs that form a micro-habitat of humidity around themselves.

VII. Remarks: This roseaceae is delicate and most passing boaters going down the canyons think it's a fern. Many locations of this plant are difficult to reach except by boating the river canyons; most ideal sites are near fast-moving water, so the boaters aren't noticing the plants as carefully as they're noticing the rapids. I suspect Ivesia baileyi occurs in more locations but has not been collected because of the preoccupation of boaters with the rapids.

VIII. Hazards: Dams flooding the canyons and atmospheric pollution (the leaves and stems collect dust readily, probably as a source of nutrients). Aerial spraying of the range above the canyon with 2,4-D or spraying crops, could damage Ivesia more than other plants.

IX. Management Recommendations: Dr. Packard and I feel that it occurs widely enough, plus is protected by its choice of habitat, so that it should be removed from any sensitive list. Therefore, there is no need for special management recommendations.

I. Langloisia puncata (bristly langloisia)

II. Family: Polemoniaceae

III. Status: None (Disjunct annual species).

IV. Known Locations:

Idaho: Owyhee County:

a. T. 1 N., R. 3 W., Sec. 35
b. T. 1 S., R. 2 W., Sec. 29
c. T. 2 N., R. 4 W., Sec. 15, 21, 22
d. T. 2 N., R. 5 W., Sec. 22 & 27
e. T. 2 S., R. 2 W., Sec. 4 & 14
f. T. 3 N., R. 6 W., Sec. 35
g. T. 3 S., R. 2 W., Sec. 10
h. T. 4 S., R. 1 W., Sec. 3 & 24
i. T. 4 S., R. 1 E., Sec. 18
j. T. 7 S., R. 3 E., Sec. 2, 3, 5
k. T. 7 S., R. 5 E., Sec. 21
1. T. 7 S., R. 6 E., Sec. 18

Ada County: T. 3 S., R. 1 E., Sec. 5

Elmore County:

a. T. 4 S., R. 1 E., Sec. 5
b. T. 6 S., R. 11 E., Sec. 23

Oregon: Malheur County:

T. 20 S., R. 44 E., Sec. 12

V. Soil Type: Various disturbed sites, including sandy soil, gravel, lacustrine, ash-clay.

VI. Habitat and Ecology: Annual disturbed site species of dry places. This species is often misidentified by most botanists. This is because most flora books for the area don't list L. puncata. L. puncata differs from L. setosissima by the presence of colored dots on the petals and by two grooves for each petal which comes from the floral tube and ends in the base of each petal. L. puncata also has a longer calyx of 8-9 mm, compared to only 6 mm. in L. setosissima. L. puncata had not been collected much prior to 1978. Many plants were collected in 1978's wet spring. L. puncata, a native disturbed site species, has been replaced by many highly competitive introduced disturbed site species, this is seldom seen.

VIII. Hazards: Increased agricultural development and off-road vehicles.

IX. Management Recommendations: This species should be worked out with nearby botanists who may be calling it L. setosissima. After consulting other botanists the range should be mapped and a decision agreed upon. For now, no special management appears necessary. At this time I would list Langloisia puncata as uncommon and vernal in Idaho.

I. Lepidium davisii (Davis's peppergrass)

II. Family: Cruciferae

III. Status: Federal Category II recommended candiate for threatened.

IV. Known Locations:

Idaho: Owyhee County:

a. T. 10 S., R. 6 E., Sec. 11 - 2 sites (Pellant)
b. T. 10 S., R. 6 E., Sec. 22, SW1/4 (Pellant)
c. T. 10 S., R. 7 E., Sec. 33 (Pellant)
d. T. 10 S., R. 5 E., Sec. 23 (Pellant)
e. T. 11 S., R. 6 E., Sec. 22 SE
f. T. 14 S., R. 6 E., Sec. 2
g. T. 13 S., R. 46 E., Sec. 2, 3
h. T. 13 S., R. 6 E., Sec. 18
i. T. 13 S., R. 46 E.
j. Diamond A Reservoir
k. T. 14 S., R. 6 E., Sec. 22 (SE 1/4 SE 1/4)
l. T. 14 S., R. 6 E., Sec. 23 (SE 1/4 SW 1/4)

Twin Falls County:

a. T. 14 S., R. 15 E., Sec. 31
b. T. 14 S., R. 15 E., Sec. 23
c. T. 14 S., R. 15 E., Sec. 32

Elmore County:

a. T. 4 S., R. 3 E., Sec. 1 (State land)
b. T. 3 S., R. 4 E., Sec. 36 (State land)
c. T. 4 S., R. 4 E., Sec. 16 (State land)
d. T. 6 S., R. 5 E.
e. 8 miles north of Bruneau on River.
f. T. 4 S., R. 4 E., Sec. 27
g. T. 4 S., R. 3 E., Secs. 1, 12, 6, 7 near Dorsey Butte.
h. T. 4 S., R. 4 E., Sec. 34

Oregon: Malheur County:

a. S.E. Coyote Lake
b. T. 31 S., R. 39 E., Sec. 5
c. T. 35 S., R. 38 E., Sec. 27 and 28

V. Soil Type: Hard bottom playa (dried up lake beds).

VI. Habitat and Ecology: L. davisii grows on bare ground, hard bottomed playas to the edge of the playa with or without Atriplex and Artemisia cana (silver sage). L. davisii has an extensive tap root and appears to be very long lived.

VII. Remarks: Lepidium davisii only occurs in very hard bottom type playas. Playas are an unusual and unique geologic and soil formation. Out of over a hundred playas in S.W. Idaho only twenty-two playas have Lepidium davisii growing in them. Several of these twenty-two playas have "rough" race tracks set up in them. Each of the L. davisii playa populations seem to be distinct, separate populations. They show independent differences in leaf shape and time of flowering (independent and in fact sometimes reverse to normal elevational trends). All the above factors suggest that L. davisii has a poor dispersal mechanism. L. davisii is apparently resistant to light mechanical disturbance in most seasons of the year except spring. Several sites are being monitored by the Bruneau Resource Area Office. Four paired playas are being monitored after the construction of water storage ponds in one playa of each pair. The study of the paired playas can give definite data to base future management decisions on. The season of grazing is believed to be of prime importance in determining the degree of disturbance. This monitoring has shown that reservoir construction in small playas can damage Lepidium populations even without the additional grazing pressure. It is believed that changes in drainage patterns caused the decline in the Lepidium population rather than grazing.

VIII. Hazards: Hard playas are very vulnerable to any assortment of uses: Race track, watering pond, irrigation storage pond, etc.

IX. Management Recommendations: Protection from all hazards is recommended. The large plays with established race track use could have small areas of the population protected. Another study should be started to see if grazing alone will damage Lepidium populations.

I. Leptodactylon glabrum Patterson and Yoder-Williams Syst. Bot. 1984 (Bruneau River Phlox)

II. Family: Polemoniaceae

III. Status: None in Idaho (uncommon), narrow endemic on Nevada's sensitive plant list.

IV. Known Locations:

Idaho: Owyhee County:

a. Jarbidge River from Cougar Creek Junction downstream.

b. Bruneau River Canyon - from 3.5 miles above Junction of Jarbidge and Bruneau River downstream to the Easts Fork of the Bruneau River (30 miles total).

Nevada: Humboldt County:

a. North Fork of the Humboldt River - 41° 30' latitude, 117° 7' longitude

b. Gorge of the South Fork of the Little Humboldt River, T. 41 N., R. 45 E,. Sec. 7 (approximately 40 individual plants).

c. Eldorado Canyon T. 31 N., R. 33 E., Sec. 26

V. Soil Type: Rhyolitic canyon walls. Rock ledges and cliffs.

VI. Habitat and Ecology: Leptodactylon glabrum grows on decomposed vertical Rhyolitic canyon walls along the Bruneau River from 2800' - 4000'. New growth comes out of last years stalks, and the plant occur in a matted caespitose nature. It is always found on vertical or underhung Rhyolitic canyon walls near rapids on the river. These vertical positions appear to protect the plant from late season frosts. It is pollinated at night by a common noctuid moth (Noctuidae). It is also intolerant of occurring in seepage areas or ephemeral water paths in rock crevices.

VII. Remarks: This collection is similar to L. watsonii and would be a range extension for that taxon. Some confusion on the taxon of this and a similar specimen occurring in the Arco desert. I believe this population to be a distinct species and recommend it be added to the Federal and State Watch List. Its habitat provides protection. This species appears to have the most limited range of all Southern Idaho's canyon dwelling plants.

VIII. Hazards: Damming of the Bruneau River.

IX. Management Recommendations: Protect from hazards.

I. Lomatium hendersonii (Henderson's biscuit root)

II. Family: Umbelliferae (Apiaceae)

III. Status: A misapplied name to a collection of Lomatium found in the Owyhee Mountains. True L. hendersonii is not found in the Boise District.

I. Lupinus brevicalius (color variety) (short-stemmed Lupine)

II. Family: Leguminosae

III. Status: None.

IV. Known Locations:

Idaho: Owyhee County:

T. 14 S., R. 4 W., Sec. 29

Oregon: Malheur County:

T. 34 S., R. 46 E., Sec. 35

V. Soil Type: Thin, granitic loam.

VI. Habitat and Ecology: Lupinus brevicalius (color variety) grows in very thin, granitic soil surrounded by sagebrush.

VII. Remarks: Lupinus brevicalius (color variety) has a yellow-cream colored flower while normal L. brevicalius is blue flowered. This plant was identified by Barneby.

VIII. Hazards: Range "improvement" programs and off-road vehicles.

IX. Management Recommendations: None.

I. Lupinus lyalli Dougl. var. washoensis (dwarf Lupine)

II. Family: Leguminosae

III. Status: (Disjunct population) Uncommon.

IV. Known Locations:

Idaho: Owyhee County:

T. 13 S., R. 1 E., Sec. 9

Nevada:

California:

V. Soil Type: Shallow volcanic gravels.

VI. Habitat and Ecology: Perennial with heavy woody caespitose base. Growing in dry, rocky volcanic soil in high elevation, (5600'), sagebrush, (Artemisia arbuscula/Poa), desert.

VII. Remarks: This population in the Owyhee is a new record for the State of Idaho and is quite disjunct from other populations which occur in the Sierra Nevada of California and nearby western Nevada. This species is being revised in the new Intermountain flora and the varieties may be altered.

VIII. Hazards: Grazing, range "improvement" programs and off-road vehicles.

IX. Management Recommendations: More information should be gathered on this species before a recommendation can be made.

I. Lupinus uncialis (inch high Lupine)

II. Family: Leguminosae (Fabaceae)

III. Status: Idaho State sensitive list.

IV. Known Locations:

Idaho: Owyhee County:

a. T. 16 S., R. 4 W., Sec. 13

b. T. 15 S., R. 4 W., Sec. 22 Coyote Hole

c. T. 14 S., R. 5 W., South Fork of the Owyhee River downstream from the confluence of the Little Owyhee River.

Oregon: Malheur County: 5 sites.

a. Crooked Creek

b. Rim rocks near Rome

Humboldt County: several sites.

V. Soil Type: Loose basaltic cinder.

VI. Habitat and Ecology: Lupinus uncialis is a small annual that grows in loose basaltic cinder which is barren of associated plants. All the roots were found to have nodules which were probably nitrogen fixing bacteria. The soil type combined with the need for the bacteria are probably important to this small annual's distribution.

VII. Remarks: The steep canyon provides habitat for many cliff dwelling plants and forms many diverse habitats for such plants. This was a new record for the State of Idaho in 1981 and was the seventh known collection in the country. It appears to be more common in Nevada and Oregon but is uncommon in Idaho.

VIII. Hazards: Off-road vehicles, road building and dams on the Owyhee River.

IX. Management Recommendations: Protect the known location from any hazard.

I. Machaerocarpus californicus (Small-fringed water plantain).

II. Family: Alismataceae

III. Status: Idaho State sensitive list.

IV. Known Locations:

Idaho: Owyhee County:

a. T. 14 S., R. 5 E., Sec. 29 NE 1/4

b. T. 14 S., R. 5 E., Sec. 4 W 1/2

c. T. 14 S., R. 5 E., Sec. 22 SW 1/4, Broken Wagon Reservoir #1

d. T. 14 S., R. 1 E., Sec. 2 & 11, Henry Lake

e. T. 13 S., R. 4 E., Sec. 23 W 1/2

f. T. 16 S., R. 1 E., Sec. 11 & 12 on the Duck Valley Indian Reservation. [Roger Rosentreter #78, #175(b)]

V. Soil Type: Soft bottom playa - sedimentary mud.

VI. Habitat and Ecology: This species occurs in a soft bottom playa. Associated species are Artemisia cana and Plagiobothryes sculi. The plant grows in water and flowers in the water or after the water dries up.

VII. Remarks: This plant is too small at 3-5 cm. to be Machaerocarpus californicus which is supposed to be 2-4 (6) dm. All other morphology fits M. californicus. Duplicates of it have been sent out for identification. The normal size is not uncommon only this small form.

VIII. Hazards: Development of the playa into a reservoir.

IX. Management Recommendations: No recommendation until the taxon is determined. I believe this plant may be a new variety of Machaerocarpus californicus.

I. *Malacothrix glabrata* (Desert Dandelion)

II. Family: Compositae

III. Status: Uncommon.

IV. Known Locations:

Idaho: Owyhee County:

T. 7 S., R. 3 E., Sec. NE

California:

Arizona:

V. Soil Type: Sandy.

VI. Habitat and Ecology: *M. glabrata* grows in barren, sandy desert areas. In Idaho it is found with *Chrysothamnus nauseosus* and *Nama aretioides*. It appears to be able to store water in it's taproot.

VII. Hazards: Off-road vehicles.

VIII. Management Recommendations: Post the area where *M. glabrata* is found closed to ORV's because the sandy habitat is so inviting to ORV's and the habitat has several uncommon plants occurring together.

I. Malacothrix torreyi (Malacothrix)

II. Family: Compositae

III. Status: Uncommon.

IV. Known Locations:

Idaho: Owyhee County:

Reynolds Creek

Bull Camp T. 16 S., R. 4 W., Sec. 13

Custer County: T. 14 N., R. 18 E., Sec. 3

Canyon County:

a. T. 3 N., R. 5 W., Sec. 2

b. T. 7 S., R. 2 E., Sec. 23 SE

Oregon: Malheur County:

a. T. 24 S., R. 44 E., Sec. 28

b. T. 29 S., R. 41 E., Sec. 5

c. Owyhee Reservoir

Harney County: T. 35 S., R. 35 E., Tuntum Lake area.

Montana: Carbon County: Disjunction population

Wyoming:

Arizona:

Utah:

V. Soil Type: "Sandy"? Gravelly soil on top of lacustrine soil.

VI. Habitat and Ecology: Known to grow in sandy, dry desert areas. Found in Idaho with open stands of Artemisia spinescens. Found in lacustrine soil with gravel but no sand.

VII. Remarks: It has a wide range but is infrequent in most of its range.

VIII. Hazards: Off-road vehicles, range "improvement" programs and spring grazing.

IX. Management Recommendations: According to Dr. Packard, this wide ranging species is in no trouble and does not need to be listed.

I. *Mentzelia mollis* (little ashy Mentzelia)

II. Family: Loasaceae

III. Status: Federal Category II.

IV. Known Locations:

Idaho: Owyhee County:

a. Upper Succor Creek T. 3 S., R. 5 W., Sec. ?

b. Jump Creek - 6 miles N.E. of Oregon - Idaho border.

c. McBride Creek - 1/4 mile west of U.S. Highway 95, T. 1 S., R. 5 W.

Oregon: Malheur County: ----

V. Soil Type: Volcanic ash.

VI. Habitat and Ecology: *M. mollis* grows only on volcanic ash occurring in the Succor Creek area.

VII. Remarks: *M. mollis* has a very small range and is highly selective in its habitat requirements. This habitat attracts off-road vehicle use. Range "improvement" programs have disturbed several sites.

IX. Management Recommendations: Change federal status to endangered and protect from all hazards.

I. Mentzelia torreyi (torrey's blazing star)

II. Family: Loasaceae

III. Status: Uncommon.

IV. Known Locations:

Idaho: Elmore County: T. 6 S., R. 11 E., Sec. 22

Owyhee County:

a. T. 7 S., R. 6 E., Sec. 3 & 34, by Indian Bathtub

b. T. 7 S., R. 3 E., Ooylitic limestone site

c. T. 7 S., R. 3 E., Sec. 5

d. Several sites all Salmon Falls Creek

Ada County: T. 2 S., R. 1 E.

Gooding County: T. 5 S., R. 12 E., Sec. 6

Twin Falls County:

a. T. 9 S., R. 15 E.

b. T. 8 S., R. 14 E., Sec. 29

c. T. 6 S., R. 13 E., Sec. 33

d. T. 9 S., R. 14 E., Sec. 10

California: Mono County: near Bridgeport

Nevada: ----

V. Soil Type: Sandy lacustrine, "Mostly dry volcanic soil," (Munz. 1970).

VI. Habitat and Ecology: Mentzelia torreyi is found in Idaho on barren, sandy lacustrine soil on the side of the Snake River Canyon. Associated plants are M. albicaulis, Atriplex, Nama aretioides and Nama densum.

VII. Remarks: Mentzelia torreyi is uncommon for Idaho. This Idaho collection is the northern limit of the Mentzelia torreyi range. Mentzelia torreyi var. acerosa is an orange flowered variety which is less common.

VIII. Hazards: Off-road vehicles and increased agricultural development.

IX. Management Recommendations: None necessary at this time. More locations should be sought to see where else in Idaho this species occurs.

I. Nemacladus rigidus (rigid thread-stem)

II. Family: Campanulaceae

III. Status: Idaho State sensitive list.

IV. Known Locations:

Idaho: Owyhee County:

T. 2 S., R. 3 W., Sec. 32

Nevada: Humboldt County:

a. Martin Creek, T. 42 N., R. 41 E.

b. Near tributary of the Little Owyhee River T. 43 N., R. 46 E.

Oregon: Malheur County:

a. T. 22 S., R. 37 E., Sec. 15 & 22

b. T. 24 S., R. 37 E., Sec. 3

c. T. 28 S., R. 41 E., Sec. 29

California: ----

V. Soil Type: Dry, caked adobe (Davis 1952).

VI. Habitat and Ecology: Nemacladus rigidus grows in dry mud at or near 4000' - 7000'.

VII. Remarks: N. rigidus has only one reported site in Idaho.

VIII. Hazards: Off-road vehicles and range "improvement" programs.

IX. Management Recommendations: Protect from hazards.

I. Pediocatus simpsonii var. robustior (Hedgehog - cactus)

II. Family: Cactaceae

III. Status: Idaho State sensitive list.

IV. Known Locations:

Idaho: Owyhee County:

a. Reynolds Creek, 1/2 way up.

b. Juniper Mt., S.E. and east of Red Canyon.

c. Red Canyon

d. T. 13 S., R. 5 W., Sec. 6

e. T. 12 S., R. 5 W., Sec. 31 & 32

Nevada: Elko County: T. 47 N., R. 64 E., Sec. 4

Washington - Wyoming, south to New Mexico and Nevada.

V. Soil Type: Dry, rocky soil.

VI. Habitat and Ecology: P. simpsonii grows in desert valleys and low elevation mountains.

VII. Remarks: This variety is known in Idaho from three locations but is found throughout the Pacific Northwest. Even with this fairly wide range and being somewhat protected by its habitat, it is subject to heavy collection pressure by cactus lovers.

VIII. Hazards: Commercial collectors.

IX. Management Recommendations: None at this time.